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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,987	07/14/2006	Jean-Jacques Sacre	PF030118	7143

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EXAMINER	
CALLAWAY, JADE R	
ART UNIT	**PAPER NUMBER**
2872	

MAIL DATE	DELIVERY MODE
12/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,987	SACRE ET AL.	
	Examiner	Art Unit	
	Jade Callaway	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/17/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either an application data sheet or supplemental oath or declaration.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in France on 7/23/03. It is noted, however, that applicant has not filed a certified copy of the 03/08961 application as required by 35 U.S.C. 119(b).

Drawings

3. The drawings were received on 1/17/06. These drawings are accepted.

Response to Amendment

4. The Preliminary Amendments to the Claims cancelling Claims 1-9 and adding Claims 10-17 in the submission dated 1/17/06 are acknowledged and accepted.

5. The Preliminary Amendments to the Abstract in the submission dated 1/17/06 are acknowledged and accepted.

Specification

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

7. Abstract, line 1, delete "The invention relates to"

8. The disclosure is objected to because of the following informalities: individual section headers are missing.

Appropriate correction is required.

Claim Objections

9. Claim 11 recites the limitation "the non-right angles" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

10. Claims 12-13 recite the limitation "the divergence of said light beam" in lines 1-2 of each claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 10-13, 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esaki et al. (5,716,122) in view of Lu (2004/0160578).

Consider claims 10 and 15, Esaki et al. disclose (e.g. figures 1-3, 6) an illuminating device comprising an optical source emitting an unpolarized light beam, a polarizing beam splitter (203a, thin film group) included between first faces (middle side length of each prism) of a first and second transparent prism (201x, 202x, rectangular prisms), which prisms each have a second exit face (shortest side of each prism) both situated within one and the same plane, said first faces (middle side length of each prism) and second faces (shortest side of each prism) of each prism being perpendicular; the light beam (803) penetrating into the first prism (201x) through a third face of this first prism (hypotenuse of 201x) and reaching the polarizing beam splitter (203a, thin film group) that transmits the light with a first polarization direction (804) and that reflects the light with a second polarization direction (805); the light transmitted by the polarizing beam splitter being transmitted to a third face of the second prism (hypotenuse of 202x) that reflects it toward the said second exit face of the second prism (shortest side of 202x), and the light reflected by the polarizing beam splitter being transmitted to said third face of the first prism (hypotenuse of 201x) that reflects it toward said second exit face of the first prism (shortest side of 201x), wherein said illuminating device also comprises a light integrating device (40, SLM) having an entry face (40aa, 40bb) that is optically coupled to said second exit faces of the prisms and that, receiving the beams reflected by the third faces of the prisms, delivers a beam through an exit face (40a, 40b) whose illumination is substantially homogeneous (light

components have the same intensity) over this face and wherein the beam splitter comprises a polarizing splitting portion (203a, optical thin film group) between the first faces of the first and second prisms [col. 4, lines 41-60, col. 5, lines 65-66, col. 6, lines 1-36, col. 7, lines 44-58]. However, Esaki et al. do not disclose that the polarizing beam splitter comprises a grid polarizer between the first and second faces of the second prism on the first face of the first prism or on the first face of the second prism. Esaki et al. and Lu are related as optical systems. Lu teaches (e.g. figure 2) two prisms that have a grid polarizer located between first and second faces of the second prism on the first face of the first prism [0019-0020]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the polarizing splitting portion of Esaki et al. to include a grid polarizer as taught by Lu in order to easily select the polarization of light that is needed for a given system.

As set forth above, the modified Esaki et al. reference discloses all elements of the claims from which the following claims depend, and the elements are hereby incorporated into the following according to dependency.

Consider claim 11, the modified Esaki et al. reference discloses (e.g. figure 1 of Esaki et al.) an illuminating device wherein the non-right angles of the prisms are substantially equal to 60 degrees opposite the first faces and to 30 degrees opposite the second face, and in that the average direction of the light beam is substantially perpendicular to the third face of the first prism as it penetrates into this prism [Esaki et al., col. 4, lines 41-60].

Consider claims 12-13, the modified Esaki et al. reference does not disclose that the divergence of the light beam is greater than or equal to 5 degrees and less than or equal to 10 degrees on either side of the average direction of the light beam. Note that the Court has held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation; see **In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235**. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to select the divergence of the light beam to be greater than or equal to 5 degrees and less than or equal to 10 degrees on either side of the average direction of the light beam, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. One would have been motivated to select the range of divergence of the light beam in order to more accurately focus a light beam incident on the prism to avoid unwanted light reflecting within the prisms.

Consider claim 16, the modified Esaki et al. reference discloses (e.g. figure 2 of Lu) an illuminating device wherein an air gap is provided between, on the one hand, the grid polarizer and the first face of the first or of the second prism on which it is formed and, on the other, the first face of the second or of the first prism, respectively facing it [Lu; 0019-0020].

Consider claim 17, the modified Esaki et al. reference does not disclose the index of the material of the prisms is less than or equal to 1.5. Note that the Court has held that the selection of a known material based on its suitability for its intended use

supports a prima facie obviousness determination; See **Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945)**. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to select a material that has an index that is equal to or less than 1.5, since it has been held to be within the ordinary skill of a worker in the art to select a known material on the basis of its suitability for the intended use. One would have been motivated to select an index less than or equal to 1.5 in order to control reflection/refraction of the light beams within the prisms.

13. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Esaki et al. (5,716,122) in view of Lu (2004/0160578) as applied to claim 10 above, and further in view of Wu et al. (6,049,404)

Consider claim 14, the modified Esaki et al. reference does not disclose a polarization rotator device associated with an exit face of the prisms. Esaki et al., Lu, and Wu et al. are related as optical devices. Wu et al. teach (e.g. figure 1) a polarization rotator device (100, 900, polarization rotators) associated with an exit face of the prisms [col. 3, lines 35-67]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of the modified Esaki et al. reference to include a polarization rotator device associated with an exit face of the prisms as taught by Wu et al. in order to select the final polarization of a light beam that exits the prisms.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kurtz et al. (2004/0070829) disclose a wire grid polarizer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jade Callaway whose telephone number is 571-272-8199. The examiner can normally be reached on Monday to Friday 7:00 am -4:30 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRC

Stephone B. Allen
Supervisory Patent Examiner